



12-17-77

SG1I

Dear [REDACTED]

SGFOIA3 Enclosed is a copy of a brief concept paper which [REDACTED] asked me to send to you. I would certainly welcome the opportunity, at some appropriate time and place, to discuss with you the specific details of what is involved in the approach outlined in the paper, and how they would apply to understanding key phenomena of interest.

Yours truly,



SGFOIA3

ENCLOSURE 2

Since the early 1960's there have been reports on intelligence applications of human biocommunication experiments at-a-distance which have been performed within eastern bloc countries. It is conjectured that the background for these reports is related to several decades of biocommunication research in the USSR which began flourishing notably in the 1920's, and which has produced provocative results.

The possibility of human biocommunication at-a-distance has always presented an intellectual difficulty to U.S.-trained scientists, not only because of pre-conceived ideological constraints, but also due to a lack of an unified theory from which mechanisms and hypotheses could be suggested. The primary message of this commentary on the subject is that some recent physics theory and corroborating experimental data lend support and encouragement to the idea that there is a physical basis for observed biocommunication at-a-distance experimental results. Further, evaluation of some recent psychiatric research has suggested the method by which the events associated with biocommunication phenomena, and the timing of their occurrence, may be objectively observed with electrophysiological measurements. Although the theoretical considerations which lead to this position involve a new twist on a historical argument involving electromagnetic principles, there are several important and significant differences between the ideas now being offered and that involving the "mental-radio" position. First, for biocommunication between any two points on the earth, there is no prediction of an inverse-square-law or falling off of the effect with distance, which is consistent with what has been observed experimentally. Second, electromagnetic shielding will not reduce or eliminate the biocommunication event taking place between the individuals concerned, no matter whether either one or both are completely and independently surrounded by shielding. Again, this prediction is consistent with experimental results. Third, there is no suggestion that the "sender" of information somehow employs a radiative transmission mechanism such that he/she can communicate directly with the "receiver." In fact, the designations "sender" and "receiver" in the usual information connotation are both inappropriate and misleading. Instead, the phenomena of biocommunication at-a-distance is more likely to involve an instance of complementary brain states and ongoing temporal processes.

The chain of reasoning regarding the physical basis for human biocommunication at-a-distance involves the characteristics of the terrestrial electromagnetic (EM) field and biological phenomena which are purported to be related to, and dependent upon, this electromagnetic field. These biological phenomena encompass several

concepts, namely, bioentrainment over evolutionary time, maintenance of normal physiological functioning, and neurological timing phenomena. The first and third of these concepts are immediately relevant to this review and will be touched upon briefly, after introducing some key information about the terrestrial EM field.

In general, one may categorize the terrestrial EM environment as having three aspects, or components: electrostatic field, magnetostatic field, and dynamic EM field. Only the latter is of immediate concern. There has been a theoretical prediction, and experimental verification, of a discrete set of continuous, global EM frequencies. These frequencies can be thought of as resonant mode frequencies of a spherical cavity whose outer and inner walls are the ionosphere and the surface of the earth, respectively. They are the only continuous natural frequencies available on the earth (all others are intermittent) and the first five resonant modes fall in the ELF region at approximately 8, 15, 20, 26, and 32 Hz.

Biological experimentation has demonstrated that the human organism is sensitive to various aspects of static and dynamic EM fields, taken singly and in combination. This sensitivity may be demonstrated from molecular to whole organism levels of physiological organization and appears to be a strong, and non-linear, function of intensity and frequency. If one focuses on the terrestrial EM resonant mode frequencies, it may be noted that the first five resonant (and dominant) frequencies span the "biological" frequency range seen in customary electroencephalograph (EEG) recordings for normal individuals. In particular, the range covering the local variation of the first resonant mode frequency is approximately the same as that for the human EEG alpha rhythm. These considerations lead to the first postulate--that there is human neurophysiological bioentrainment to the resonant frequencies previously mentioned. The bioentrainment is presumed to follow a development coincident with man's own evolutionary development. This view entails the notion that individual maturation phenomena eventually result in the neurologically mature organism being sensitive and resonantly responsive to the EM fields, magnitudes, and frequencies associated with the resonance characteristics. Additionally, it is postulated that the bioentrainment idea includes a developmental and evolutionary response to the characteristics of the terrestrial electrostatic and magnetostatic fields, but this is outside the immediate concern of this review. The notion of bioentrainment is not at all startling when we are reminded that everything from molecular binding to the operation of human physiological units and organs, including the central nervous system, is based fundamentally on electromagnetic principles.

The next consideration is that the resonant terrestrial EM frequencies might provide a continuous clock frequency for neural timing functions; and also, that these same frequencies may act as carrier waves and may contain information (as is possible for any EM frequency) which is significant for ordinary (as well as extraordinary) human communication. In the absence of any clear anatomical evidence of structures acting as generators to provide internal clocks, it is possible to conceive of an alternative in which the terrestrial resonant frequencies provide external clock frequencies to which the neural system has adapted during evolutionary development, and to which it now responds in a manner analogous to a high Q resonant circuit. These timing signals might then be used for specific neurological functions as well as to provide the basis for neural coincident events elsewhere in the brain. The notion that these same EM frequencies may carry information which may be decoded and encoded by the human brain via field interactions should be assessed in light of the fact that these low frequencies have extremely long wavelengths (e.g., 10 Hz corresponds to a 30,000 kilometer wavelength). Thus, the concept of human biocommunication utilizing these earth resonance frequencies does not require a human being to somehow generate low frequencies for radiative transmission without accompanying physical structures which are the correlates of long antennas.

It is now relevant to turn to the field of psychiatric research and consider some recently observed electrophysiological phenomena involving timing. It appears that individual electrophysiological measurements made on a normal human being display synchronous isomorphic pattern changes and gradient discontinuity. This behavior has been technically defined as self-synchrony. An additional form of synchrony has been found, however, which is defined as interactive synchrony, and is particularly noteworthy for its implications regarding human communication. When a normal speaker is involved in a conversation with one or more individuals, the listeners' individual self-synchronous pattern changes occur simultaneously with those of the speaker. No nonshared changes are found to occur during interactive synchrony. When a communicative sequence is completed or interrupted, interactive synchrony disappears, leaving intact individual self-synchronous behavior.

By now it should be clear how all the foregoing is related to the consideration of human biocommunication at-a-distance. If one couples the idea of the resonant frequencies performing the role of information transmission frequencies to the phenomena of interactive synchronization, there is the immediate suggestion that objectively measureable EEG interactive synchronization patterns could be observed

between two communicating individuals whether they are two meters apart or thousands of kilometers apart. Due to the extremely long wavelengths involved, there will be no fall off of the communication with distance, nor will ordinary EM shielding techniques have any effect on the phenomena. Similarly, the concept of the terrestrial EM resonance frequencies as low frequency carrier waves for biocommunication does not require a radiative transmission mechanism for long distance communication generated by the human brain.

Finally, some brief mention should be made that probably only ten percent or less of the human population has a natural, untrained capability to produce positive results when involved in biocommunication at-a-distance experiments. The reasons for this are undoubtedly related to the genetic constitution of the individual, plus the development of each individual based on his own historical environmental experiences. To this is added the postulate that the interactive synchrony phenomena previously mentioned results in the establishment of memory patterns which the brain can identify and remember, and so lead to the triggering of complementary brain states during biocommunication events between individuals who are well known to each other from a long history of previous associations. This is not the place to review U.S. and U.S.S.R. research work in biocommunication at-a-distance, except to note that the principles which have been reviewed here are consistent with all known results of this type of research, and that the several decades of work in the U.S.S.R. by Vasiliev on telepathic hypnosis are particularly enlightening in this regard. The electrophysiological approach of Russian research in this area has also yielded the purported observation of coincident EEG events in the individuals involved in biocommunication experiments at-a-distance--a result which is not surprising in view of the hypotheses which have been outlined above.